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SOIL CONSERVATION LITERATURE
SELECTED CURRENT REFERENCES

V.3

November/December, 1939

No.6

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"We think of our land and water and human resources not as static and sterile possessions but as life-giving assets to be directed by wise provision for future days. We seek to use our natural resources not as a thing apart but as something that is interwoven with industry, labor, finance, taxation, agriculture, homes, recreation, good citizenship. The results of this interweaving will have a greater influence on the future American standard of living than all the rest of our economics put together."

F. D. Roosevelt

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From Publications Received In The
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Field office requests for loans should be submitted by letter through the Regional Office libraries. Complete citations, together with source of references, should always be included.

Washington office requests should be submitted on Form SCS-405, which will be supplied by the Library on demand.

Mildred Benton
Librarian

PERIODICAL ARTICLESAlfalfa

Stephenson, R.E. Alfalfa helps keep good soils good. Calif. Cult. 86(22):589, 611. Nov. 4, 1939.

As a permanent cover crop in the irrigated orchard where water is cheap and abundant or as a part of the regular crop rotation, alfalfa is equally effective in renewing soil humus and nitrogen.

Wilt-resistant alfalfa in Nebraska. U.S. Bur. Reclam. Reclam. Era 29(10): 265, illus. October 1939.

An article taken from the Scottsbluff Star Herald states that it is the belief of experiment station workers that "wilt-resistant alfalfa will go a long way toward solving the erosion problem".

American Meteorological Society

American meteorological society. Minutes of meeting in Milwaukee, Wis., June 19-20, 1939. Amer. Met. Soc. Bul. 20(7):293-297. September 1939.

Includes abstracts only.

Those of interest are as follows: Water - its relation to land use, by R.H. Musser, p. 294; Lower Ohio vs. upper Ohio river floods, by W.E. Barron, p. 294-295; Epochal flood frequency and intensity in the La-Crosse district, by A.D. Sanial and N.A. Matson, p. 295; Problems of stream-flow forecasting on tributaries of the upper Mississippi, by B.S. Barnes, p. 295; The unit hydrograph, by L.K. Sherman, p. 295.

Biotic Farming

Leopold, Aldo. A biotic view of land. Jour. Forestry 37(9):727-730. September 1939.

"Biotic farming, in short, would include wild plants and animals with tame ones as expressions of fertility. To accomplish such a revolution in the landscape, there must of course be a corresponding revolution in the landholder. The farmer who now seeks merely to preserve the soil must take account of the superstructure as well; a good farm must be one where the wild fauna and flora has lost acreage without losing its existence."

McAtee, W.L. Biologic balance on the farm. Soil Conserv. 5(4):97-99. October 1939.

Montgomery, G.A. Texas brings back quail. Capper's Farmer 50(11): 13, 22, illus. November 1939.

"Texas has mapped an approach to the game management problem that merits national attention. There wildlife has been recognized as one of the logical products of farm and ranch and it is getting consideration similar to that given cotton, corn, cattle, and other farm enterprises."

Moss, A.E. Relation between take of upland game and agricultural land use in Connecticut. Jour. Wildlife Mangt. 3(3):269-278, figs. July 1939.

"This study seems to indicate that the success of pheasant stocking in this State is very closely related to the average productivity of the soil. Increase of pheasants on the less productive soils can be brought about only by land management practices that will improve food and other habitat conditions."

Capillarity

Afzal, M. and Vaidhianathan, V.I. A note on capillarity and subsoil water-table. Indian Acad. Sci. Proc. 9(4):Section A, 309-311, illus. April 1939.

An explanation of the fact that in Punjab and Sind even a small irrigation or a slight shower of rain causes shallow wells to rise out of all proportion to the amount of water received.

Conservation

Kauffman, Erle. Conservation over the dam. Amer. Forests 45(10):487-491, 510, 524, illus. October 1939; 45(11):546-550, 560-561, illus. November 1939.

"Can timber, wildlife and man prosper together in the new land pattern being cut in coastal South Carolina by the Santee-Cooper project?"

Lovell, William. Jurisdiction over federal conservation areas. Wis. Conserv. Bul. 4(10):3-12. October 1939.

"The following essay was written by William Lovell of Madison, a junior student at the University of Wisconsin, for which he received the William Jennings Bryan annual award for the best essay in the field of constitutional law.

"We, the editors, feel that it is an unusual privilege to be able to present to you such a concise and readable summary of the pertinent facts and precedents in the conflict of jurisdiction over federal conservation areas with special reference to the Necedah Migratory Waterfowl refuge and written from the unbiased viewpoint of someone who has no connection or interest in either our department or the federal government."

The essay will be concluded in the November issue.

County Planning

Allin, B.W. A "two-way channel" in planning. Jour. Forestry 37(10):770-771. October 1939.

"County planning is one of the newest developments in the broad field of land use planning. It differs, however, from other planning practices in that those most directly affected by the plans actually participate in their formulation. County planning is now being done in many states. The following article describes not only the method but the broad authority under which it is done."

Herbert, P.A. Some phases of county planning in Michigan. Jour. Forestry 37(9):743-747. September 1939.

Johnson, N.W. Raw materials of Montana policy. U.S. Bur. Agr. Econ. Land Policy Rev. 2(5):35-38, illus. September-October 1939.

Refers to recent farm adjustment studies in Montana which have yielded data indicating the future of dry-land farming in the plains area of the state. The writer emphasizes the importance of active participation of all farm families in planning in order that programs of readjustment may be successfully accomplished.

Loomis, C.P. Plans and the man. U.S. Bur. Agr. Econ. Land Policy Rev. 2(5):30-34. September-October 1939.

Describes the services of the Division of Farm Population and Rural Welfare, Bureau of Agricultural Economics, "which is prepared to bring to bear on county planning the viewpoints of the sociologist, the social psychologist, the cultural anthropologist and the human geographer".

McLeod, J.H. The wheat community. U.S. Bur. Agr. Econ. Land Policy Rev. 2(5):24-29, table. September-October 1939.

"Wheat Community in Roane County, Tenn., composed of 734 farm people, offers a clear-cut picture of rural people working together to solve their economic and social problems...

"Since 1937 considerable progress has been made toward developing a rounded program to check erosion, maintain and build soil fertility, conserve soil moisture, and lay the foundation for increased economic returns from the operation of these farms in the future."

A detailed analysis is given of changes made since and through the community planning, based on a survey made in the spring of 1937 and a recent check-up.

Dams

Casagrande, Leo. New light on stability problem of earth dams. Deut. Wasserwirtschaft 34:97. March 1939.

"Until recently the position was that, while theory seemed to indicate stability for any sand embankment having an angle flatter than the natural one, regardless as to whether it stood in air or under water, yet observation had shown that when submerged cohesionless sands would sometimes lose all stability and flow away. Arthur Casagrande, at Harvard University in '35, was the first to explain satisfactorily the role of porosity in submerged cohesionless materials like sands. (See J. Boston Soc. Civil Eng., Jan. '36). Since then much valuable work has been done by him and under his direction and 'critical porosity' has become an established concept. (See report of U.S. Engineer Office in Boston, Apr. '38). A detailed and illustrated account is given, with tables and graphs, of some of the Casagrande experiments. One very practical result has been the discovery that sands of dangerous porosity can be brought into a safe condition by rolling with a heavy roller, and that this operation is by no means an added expense, because, owing to the gain in stability, the quantity of material required is greatly reduced. - Frank Hannan." Amer. Waterworks Assoc. Jour. 31(7):1245-1246. July 1939. Original article not available in Washington.

Creager, W.P. Design and maintenance of earth dams. Amer. Waterworks Assoc. Jour. 31(8):1335-1360, figs. August 1939.

Greclius, S.F. Green mountain dam and power plant. U.S. Bur. Reclam. Reclam. Era 29(10):253-255, 277-278, illus. October 1939.

Rabe, W.H. Die neuzeitliche bauweise von erdstaudämmen in den VStA und ihre anwendungsmöglichkeit in Deutschland (New methods of earth dam construction in the United States and their practical application in Germany) Bautechnik 17(36):497-501. Aug. 25, 1939.
Article in German.
To be continued.

Small earthfill dam typical of modern practice. Engin. News-Rec. 123(17): 533. Oct. 26, 1939.

Describes a dam near Delta, Colo. built following the failure of the Fruit Growers Dam during a flood in June 1937.

Warner, J.H. Construction of Seminoe dam and power plant, Kendrick project, Wyoming. U.S. Bur. Reclam. Reclam. Era 29(10):269-273, 278, illus. October 1939.

Evaporation

Wilson, J.D. and Paton, R.R. Comparative evaporation rates in normal forest, open park, and cleared areas. Ohio Agr. Expt. Sta. Bimo. Bul. 24 (198):64-69, tables. May-June 1939.

Table 1. Comparative evaporation rates in three degrees of exposure at Shawnee State Forest in 1928, 1930, and 1931.

Table 2. Comparative evaporation increments due to radiation (B-W) for different 4-week periods during the summer in a cleared field, a park area, and a normal forest.

Table 3. Evaporation from black and white atmometers in an open area and a pine planting over a period of 3 years at Waterloo State Forest.

Table 4. Evaporation from black and white atmometers in a cultivated area and a small forest of mixed hardwoods at the Wooster Experiment Station.

Farm Forestry

Bailey, Clara. Farm boys plant forests for the future. Amer. Forests 45(11):554-557, illus. November 1939.

Phases of 4-H forestry work.

Bruner, M.H. Why not give existing programs a fair trial? Jour. Forestry 37(11):846-848. November 1939.

"The necessity for improved forest practice on private lands is admitted, but the plea is made that owners are making progress and should be given ample opportunity to show what they will do voluntarily with increased technical advice from state and federal agencies before any form of public regulation is put into effect."

Whither federal-land grant college cooperation in farm forestry?
Jour.Forestry 37(10):757-758. October 1939.
Editorial.

Farm Ponds

Jepson,H.G. Farm ponds in soil and moisture conservation. Soil
Conserv.5(4):77-82,illus. October 1939.

Swingle,H.S. Construction of farm ponds. So.Agr.69(11):12,illus.
November 1939.

Fire Control

Chase,W.W. Uncontrolled fire,an enemy of conservation. U.S.Soil
Conserv.Serv.Upper Mississippi Reg.Prog.Exch.Tech.Suppl.Sept.20,1939.
pages 1-3.

Hanson,H.C. Fire in land use and management. Amer.Midland Nat.
21(2):415-434. 1939.

The author contends that it is the duty of research to determine fully and accurately the values and losses caused by fire not only to present existing vegetation,animal life,soils,etc.,but also to the future conditions of the burned area.At present the supply of scientific data of this sort is very meager.As such data accumulate, fire as a tool in land use and management will be utilized far more frequently by administrators than is possible at present.

Meginnis,H.G. Soil-collecting trenches as substitutes for temporary check dams in reforesting gullies. Jour.Forestry 37(10):764-769, figs. October 1939.

"The reforesting of gullies is a difficult and relatively expensive job at best.The trials of soil-collecting trenches as substitutes for temporary check dams in reforesting gullies has not yet progressed sufficiently to warrant final conclusions,but the results obtained so far indicate that the method may find considerable use on erosion control projects.Furthermore,it is likely that additional study of the method will result in improvements and modifications to broaden its sphere of usefulness."

Floods and Flood Control

Bernard,Merrill. Trends in the development of flood forecasting. Amer.Met.Soc.Bul.20(8):336-337. October 1939.

Creager,W.P. Possible and probable future floods.Analysis of data on "Record Floods" suggests need for comprehensive program of research in storm probabilities. Civil Engin.9(11):668-670,figs. November 1939.

Grass

Norman,A.G. Biochemical approach to grass problems. Jour.Amer.Soc. Agron.31(9):751-760,tables. September 1939.
"Literature cited,"p.760.

Gully Control

Freise, F.W. Untersuchungen über die folgen der brandwirtschaft auf tropischem böden. Beobachtungen aus dem gebiete der küstenurwälder Brasiliens. (Investigations on the effects of burning debris in tropical soils. Observations in coastal virgin forests of Brazil) Tropenpflanzer 42(1):1-22, illus. January 1939.

Article in German.

"The clear-cutting of virgin forest followed by repeated burning of debris and ground vegetation, before and in the course of agricultural cultivation, will seriously reduce the permeability of the soil, and will result eventually in almost complete destruction of the micro-flora and fauna. The presence of mineral nutrients is more pronounced in areas adjoining burnt plots than within them. It appears that erosion on denuded and burnt areas is largely due to the 'shattering' effect of salts breaking up the soil particles. From the author's small-scale experiments it appears that the effects of repeated burning can be reduced to a considerable extent by loosening the burnt-over soil and spraying it with water. Nevertheless, natural regeneration will be possible only after a gradual removal of the scurf by wind and rain." --Forestry Abs. 1(2):78. 1939.

Hawaii

Winters, N.E. Farmer starts soil saving program. Masashi Nishikawa launches first soil and water conservation work of its kind in the islands at his 10 acre papaya farm at Kailua. Hawaii Farm and Home 2(8):3, illus. Aug. 15, 1939.

Hydraulics and Hydrology

Boyer, M.C. Determining discharge at gaging stations affected by variable slope. Civ. Engin. 9(9):556-558, figs. September 1939.

"Ideally, stream gaging stations should be located at points where the stage-discharge relation is unaffected by changes in conditions downstream - that is, at points above the influence of back-water. As a practical matter, such locations are becoming increasingly difficult to find. Satisfactory results can still be obtained, however, by making use of simultaneous readings from two stations. In the accompanying paper, Mr. Boyer outlines the methods used by the Geological Survey in such cases. His contribution was on the Hydraulics Division program at the 1939 Spring Meeting."

Brater, E.F. The unit hydrograph principle applied to small watersheds. Amer. Soc. Civ. Engin. Proc. 65(7):1191-1215, tables, figs. September 1939.

Durand, W.F. The flow of water in channels under steep gradients. Engineering, London, 148(3837):120-122. July 28, 1939.

Kalinske, A.A. Relation of the statistical theory of turbulence to hydraulics. Amer. Soc. Civ. Engin. Proc. 65(8) Part 1:1387-1406, illus. October 1939.

The practical application of the theories of turbulence to some

specific problems is indicated. The experimental data were obtained by injecting color streams and suspended immiscible liquid droplets into turbulent water streams and by using motion-picture photography.

Trossbach, D.G. On waves of artificial origin in a natural watercourse. Deut. Wasserwirtschaft 34:57, 108. February-March 1939.

"Time and again do we find advantage taken of the occurrence of floods, either of natural or artificial origin, to note and record characteristics of the flood flow, or wave. Opportunity for study of flow fluctuations of moderate amplitude is not usual. Interest therefore attaches to certain conditions in the upper Danube which produce a more or less regular daily pulsation in the flow. In combination with this, there are government-maintained automatic water-level recorders at frequent intervals along the course of the stream, by means of which the diminishing intensity of the pulsations as they travel downstream is brought into clear relief until their gradual but final extinction at about 210 km. from their origin. The pulsations are caused by operation of three hydro-electric power plants by the city of Ulm on the Danube. The plants are all on the Danube and above the city. The stream-flow fluctuates rather widely and for this reason all three plants have turbine capacities which are for a great part of the year in excess of the available flow. But each plant has extensive impounding facilities and when the demand for power dies down at night it starts to store a portion of the stream flow in its reservoirs, to be used next day to supplement the regular stream-flow at times when power demand is high. Among the observations of interest are noted the following: As a wave passes downstream, its height will decrease more rapidly than the volume of water accompanying it. Its flattening out is due much more to the influx of tributaries than to adjustments taking place in the watercourse itself. This is easily understood when we remember that the tributaries are comparatively large; the Iller, for instance, which joins the Danube at Ulm, often carries the larger volume of water at the junction of the two. Also the tributaries are very numerous on both banks. The length of these waves is so great, in proportion to their height, that stream-line flow may be assumed. The velocity of wave propagation is always greater than that of the water itself. Of four formulas for wave propagation velocity which were tested, those of Boussinesq, Scott Russell, Bazin, and Forchheimer, the last agreed best with observations. - Frank Hannan." Amer. Waterworks Assoc. Jour. 31(7):1249-1250. July 1939. Original article not available in Washington.

Irrigation and Drainage

Archibald, S.W. Ontario stream control. Canad. Engin. 76(14):9-14. Apr. 4, 1939.

Investigation of application of drainage acts of Province of Ontario to problem of flood control and damage prevention.

Currie, Herbert. New acres for the West. Country Gent. 59(11):7-8, 45, illus. November 1939.

Tells of the new major water projects of the Bureau of Reclamation

which will mean "that the development of irrigation on good soil will attract farmers from poorer farms, thus swapping marginal acres for good acres".

Dudley, J.W. The individual irrigation of orange trees. Calif. Cult. 86(21):563, 570-571. Oct. 21, 1939.

Includes statement of John Brooke Fink, director of the department of conservation and development in the State of Washington, who, in his ninth biennial report, prints interesting facts about the history of reclamation development in the State of Washington. It is interesting because he claims records in his department show irrigation development started about 100 years ago.

Nebraskans try border irrigation for alfalfa. West. Farm Life 41(18):20. Sept. 15, 1939.

Porter, W.D. Under the ditch in years to come. West. Farm Life 41(19):3, 18, illus. Oct. 1, 1939.

"Today, more than ever before, are heard the pros and cons of the pertinent question, 'Can a civilization endure under the ditch?' Historicians say 'No!' while modern agricultural experts say 'Yes,' with reservations.

"Those who vote 'aye' explain in the next breath that, if people continue in the semi-arid West, they must adopt immediately certain practices which will insure the maintenance of the watersheds, conserve water, and develop additional irrigation resources.

"Before such practices can be adopted, however, more must be known about the factors that influence watersheds, stream flow and the amount of water delivered to the farmer's head-gate. In addition, there must be an awakening among the people to the importance of the watershed areas."

Rowland, W.E. Dike irrigation. Mont. Farmer 27(2):6, illus. Sept. 15, 1939.

Smith, A.R. Landslides as a maintenance problem. A discussion of some of the causes of landslides and how they may be prevented by adequate drainage control. Earth Mover and Road Builder 26(7):22-23, illus. July 1939.

Sorensen, H.G. Notes on irrigation of certain Cuban soils. Int. Sugar Jour. 41(488):307-311. August 1939.

Areas to select for irrigation; size of irrigation projects; drilling of well and installation; details and suggestions with regard to irrigation layout; number and shape of gates, etc.

Work, R.A. Soil moisture control by irrigation. Agr. Engin. 20(9):359-362, illus., fig. September 1939.

"Literature cited," p. 362.

Land in Rural Fiction

Sherman, C.B. Land plays new role in rural fiction. U.S. Dept. Agr. Agr. Libr. Notes 14(10):597-599. October 1939.

"Clear-headed analysis uncolored by predilections might be said

to mark our present-day fiction involving the land. Without sentiment, even though they may work with fervor, the authors look at the land in its relation to people, and grapple with the problems that the combination develops. They see the land no longer as necessarily an ally of the farming family but as an element in living that may cause endless difficulty if understanding of the soil and tolerance among men are not a part of the association."

The reviewer has the following to say about books which are of particular interest to the Soil Conservation Service:

'Dust bowl tragedies are typified in The Tree Falls South, wherein Wellington Roe wrestles with drought and foreclosures, and their relation to State and Nation.

"Genuine knowledge of different kinds of land in the Dakotas and their different kinds of uses is evident in Horace Kramer's Marginal Land. This book demonstrates that a virile story can be told without grossness, and that apparently a man can go native without losing the finer characteristics of mind and spirit. 'This is the perfect democracy,' the leading character thought to himself as he gradually found complete adjustment to the new country and its people.

"Again the River, by Stella Morgan, does not sound like a tale of the land but it may hold suggestions for those who are working with the problems of removing families for their own good. In this book a little group of persistent people insist upon living on the edge of a river that is given to periodic overflow. Three times they are dispossessed with tragic attendant circumstances but each time they return to their doomed acres. No place can seem like home to them unless it is at the foot of the hills and on the brink of the water."

Land Utilization

Cronin, F.D. Displaced families in the land utilization program. Southwest. Social Sci. Quart. 20(1):43-57. June 1939.

"This paper was read at the annual meeting of the Southwestern Sociological Society, Dallas, April 7-3(?) 1939."

"The writer gives first a brief history of the development of the land program and then discusses the problem of resettling the displaced families in the Northern Great Plains region particularly."

Dreier, John. Two million submarginal acres. U.S. Bur. Agr. Econ. Agr. Situation 22(10):9-10. October 1938.

Howard, L.V. Recent developments in the field of Federal-State cooperation in agriculture. Jour. Politics 1(2):206-212. May 1939.

"Reviews particularly the organization set up in 1938 for federal-state cooperation in land use planning."

Johnson, Bert. Southern land use and Southern people. Com. Fert. 59(1):36-38, 40-41. July 1939.

Knutson, C.F. The application of a land utilization program to the Chippewa National Forest. Jour. Forestry 37(9):738-740. September 1939.

Sawyer, L.E. Land use adjustment program of the Soil Conservation Service in the Upper Mississippi Valley. Jour.Forestry 37(9):740-743. September 1939.

Spencer, J.W. Present day land utilization problems. Jour.Forestry 37(10):772-774. October 1939.

"Public agencies administering public lands are confronted with many problems. Not the least important to these arise from the mismanagement of private lands within or adjacent to publicly owned areas. In order to remedy the present situation it will be necessary to revise the existing tax structure, regulate the use of private lands, expect more efficient land management, or acquire the lands by the public. Each of these remedial measures has some possibilities; in order to solve the problem all four must become effective."

Wehrwein, G.S. The economist's approach to ecology. Jour.Forestry 37(9):731-734. September 1939.

The author contends that "there is work for both the natural scientists and the economist in planning land uses in harmony with physical and socio-economic laws".

Zon, Raphael. The human side of land use. Jour.Forestry 37(9):735-737. September 1939.

Condensed in Conserv. 5(5):26-28. Sept/Oct. 1939.

Legumes

Sturdy, D. Leguminous crops in native agricultural practice [Tanganyika Territory]. East African Agr. Jour. 5(1):31-32, 33. July 1939.

"References," p. 33.

Tehon, L.R. Two new fungi on legumes. Mycologia 31(5):537-543. Sept/Oct. 1939.

Placosphaeria medicaginis n.sp. on alfalfa, Catosphaeropsis caulivora n.gen., n.sp. on Korean lespedeza.

Maps and Mapping

Bushnell, T.M. The rectification of enlargements and of map data from aerial photos by Indiana soil survey. Photogrammetric Engin. 5(3):147-152, illus. July-August-September 1939.

Cozzens, A.B. Analyzing and mapping natural landscape factors of the Ozark Province. Acad. Sci. St. Louis, Trans. 30(2):37-63, figs. May 31, 1939.

Meadow Strips

Cook, H.L. and Campbell, F.B. Characteristics of some meadow strip vegetations. Agr. Engin. 20(9):345-348, illus., tables. September 1939.

Moisture

Bialy, A.M. Moisture evaporation from the soil surface beneath vegetation. Sotsial.Zern.Khoz.no.4,1939. pp.21-27.

Article in Russian.

"Experiments with mulched and unmulched plots under dry-farming conditions. The plants on the mulched plots were much more rapid in their development than those on the unmulched plots." -- Soils and Fert.2(5):217. 1939.

McColly, H.F. Snow ridging for moisture conservation. Agr.Engin. 20(10):383-384,386,illus.,tables. October 1939.

Shaw, Byron and Baver, L.D. Heat conductivity as an index of soil moisture. Amer.Soc.Agron.Jour.31(10):886-891,figrs. October 1939.

Orchard Management

Ahlson, C.B. Orchard cover crops in the Pacific southwest region. Soil Conserv.5(3):66-67,illus. September 1939.

Brown, G.F. Mulching northeastern orchards. Soil Conserv.5(3):45-47, illus.,tables. September 1939.

Brown, Lloyd. Reducing soil erosion in unirrigated orchards. Calif. Cult.86(19):506. Sept.23,1939.

Photogrammetry

Field, R.H. Instrumental aids to photogrammetry. Engin.Jour., Canada, 22(9):391-399,figrs. September 1939.

"References,"pp.398-399.

Summary - "Air photography is exerting an important effect on photogrammetrical instruments. Some of these developments - including a number of Canadian origin - are described. In many parts of the world photogrammetry is considered the paramount method of mapping. This is particularly true in Canada where so much territory is otherwise inaccessible. This paper is a conspectus of instruments and methods."

Ninneman, J.W. Aerial photography service requirements. Photogrammetric Engin.5(1):21-25. January-February-March 1939.

Wright, M.S. The application of photogrammetry to its related sciences. Photogrammetric Engin.5(1):46-54. January-February-March 1939.

Plant Diseases

Wood, J.I. and Nance, N.W. Diseases of plants in the United States in 1937. U.S.Bur.Plant Indus. Plant Disease Reporter Sup.110 Dec.31, 1938. (Issued Oct.1,1939)

Partial contents: Diseases of Forage and Cover Crops; Diseases of Fruit Crops; Diseases of Nut Crops; Diseases of Trees; Diseases of Ornamental and Miscellaneous Plants.

Public Domain

Robbins, R.M. The public domain in the era of exploitation, 1862-1901.
Agr. Hist. 13(2):97-108. April 1939.

Puerto Rico

Holdridge, L.R. Forestry in Puerto Rico. U.S. Tropical For. Expt. Sta.
Caribbean Forester 1(1):7-11. October 1939.

Malaret, R.J. La erosion de las tierras en Puerto Rico (The erosion
of soil in Puerto Rico). La Chacra 9(106):36-38, illus.
August 1939.

Refers to SCS work under the direction of G.L. Crawford.

Rainfall

Lackey, E.E. Annual rainfall variability maps of the United States.
U.S. Mo. Weather Rev. 67(7):201. July 1939.

"The series of 51 rainfall maps herewith described involve the
weather records of 2,077 stations in the United States. Only a few
records were used that were not up to date, and none which included
fewer than 20 consecutive years. A small number of records ran to
more than 100 years."

Schantz-Hansen, T. and Brown, R.M. Variation in rainfall over short
distances at the Cloquet forest experiment station. Jour. Forestry
37(10):804-806, tables. October 1939.

"Literature cited," p. 806.

"In the older European forestry literature there are many refer-
ences to the influence of forests on rainfall. Rain gauges were
established in forests and in contiguous open areas. Higher catches
of rainfall in the forests were interpreted as showing that forests
increase rainfall. A statistical analysis of the rainfall catches in
the forest and in open areas in northern Minnesota indicates that
variations in rainfall as large as 30 or 40 percent, but still hav-
ing no statistical significance occur within short distances. Con-
sequently, the older data on the influence of forests on rainfall
should be used only with the greatest circumspection if indeed
they should be used at all."

Wilm, H.G., Nelson, A.E. and Storey, H.C. An analysis of precipitation
measurements on mountain watersheds. U.S. Mo. Weather Rev. 67(6):
163-172, figs., tables. June 1939.

Reforestation

Heringa, P.K. De stand der reboisatie in verband met de industrialisatie
in Oost-Java (Reforestation in view with industrialisation in East
Java) Tectona 32(3):256-264. March 1939.

Article in Dutch with English summary.

Extracted from "Het Landbouwkundig Tijdschrift, maandblad van het
Ned. Genootschap voor Landbouwwetenschap" no. 611 van April 1938.

"The Javanese forests, which principally serve a hydrological

purpose, have an area of one fifth of the whole island.

2. Further deforestation of Java, with its 316 inhabitants per km. would result in a lower output of the whole of the grounds, now in use for agricultural purpose, and would be specially fatal for the irrigated rice fields.

3. Therefore, and on account of an exact survey and classification of the soil, the Dutch Government has stopped the further issue of grounds for agricultural purpose, as well to the natives as on long lease to the Europeans.

4. The dense population of Java, however, makes it necessary to raise the provision of work and products from the forests.

5. In order to attain this object the hydrological woods are pressed into service of the industrialization of Java, viz. the manufacturing of chests and cases, matches and boxes, paper manufacturing, cellulose, chapped and ground bark (*Acacia decurrens*) tannine extracts, turpentine, tung oil (and other Aleurites oil) Santalum oil, etc., etc.

6. On that account, on different altitudes of the Javanese mountain-forests, objects were chosen of 1000 till 10,000 acres, each of which will provide one of the industries mentioned above, which will be established on that place.

7. The planting is done in such a form, that the hydrological value of these grounds and woods will not diminish."

Maissurow, D.K. Mixed group planting on the Nicolet National Forest. Jour. Forestry 37(11):853-855. November 1939.

"During the fall planting season of 1936, the Nicolet National Forest initiated, on a large scale, a new method of mixed planting, especially adapted for the reforestation of large tracts. In this method, two or three species of different cover requirements are mixed in groups, the size and location of which are determined by the distribution and density of protective vegetation and by the cover requirements of the species planted. This mixed group planting, as it was called, has not passed the experimental stage and has become a standard method of planting on the forest."

Range and Pasture Management

Aamodt, O.S. One half billion acres of pasture. Fert. Rev. 14(5): 6-7, 12, illus. September-October 1939.

"The domain of the Division of Forage Crops and Diseases of the Department of Agriculture embraces an empire of grass. How is it managed? How is it being built into a permanent national asset? These questions and many more are answered here."

Collins, Wilkie, jr. Crested wheatgrass on denuded range and "go-back" land. Soil Conserv. 5(3):59-60, 63, 67, illus. September 1939.

Dodd, D.R. "I couldn't farm without it." That's what one Ohio farmer told the writer about pasture improvement. Not so long ago pasture improvement was unheralded and unsung. Today it swings into the top ranks of farming practices. The team that pulls it to the front - good fertilizer practices plus good management. Here an agronomist of wide experience gives pointers on making pastures pay. Fert. Rev. 14(5):2-3, 13-14, illus. September-October 1939.

Flory, Ewan. The role of reseeding in restoring southwestern ranges. Soil Conserv. 5(3):61-63, illus. September 1939.

Hurt, L.C. Overgrazing increases production costs by reducing number and weight of range calves. Cattleman 26(5):52, figr. October 1939.

Lancaster, R.R. Seeding pastures. Cattleman 26(5):30. October 1939.

Potter, E.L. Grass or brush, which? Oregon progresses in the handling of grazing land which is spotted with thickets. Amer. Hereford Jour. 30(11):66-67. Oct. 1, 1939.

Tells of progress made towards closer cooperation between the livestock and agricultural interests and the timber and forestry interests which is resulting in better handling of those lands which seem best suited to grazing but at the same time tend to revert to brush and timber and to thereby create a fire hazard.

Semple, A.T. How to use our greater acreage of hay. Soil Conserv. 5(3):68-70, 72, illus. September 1939.

Weaver, J.E. and Hougren, V.H. Effect of frequent clipping on plant production in prairie and pasture. Amer. Midland Nat. 21(2):396-414. 1939.

"The rate of degeneration of native bluestem (*Andropogon*) prairies in eastern Nebraska and decrease in forage production when they degenerate into shortgrass or bluegrass pastures has been studied. The clip quadrat method was employed, a total of 190 meter quadrats being used at 6 stations. Total yields of prairie quadrats cut at frequent intervals during the 1st year exceeded those clipped only at the end of the season by 11-26%. An exception occurred in the *Andropogon furcatus* type, because of the heavy flower-stalk production of the controls. Quadrats closely clipped for 2 seasons always gave lower total yields than a single clipping of the controls. In little bluestem (*A. scoparius*) the yield averaged 46 to 49% less, in big bluestem (*A. furcatus*) 28% less, and in mixed little and big bluestem 43-52% less than the controls. Yields from quadrats frequently clipped during 2 years were likewise much lower than from those similarly clipped for only a single year. In the preceding order of species the yields were 60, 37, and 51% less. When clipping was continued in the same quadrats for 3 years, yields of little bluestem were 68% and mixed bluestems 56% less than the controls, and 42 and 23% less than from similar quadrats clipped for 2 years. This rapid decrease in yield following too close utilization of the forage resulted also in deterioration of underground plant parts. Decrease in dry weight of the plant materials in the surface 4 inches varied from 33 to 41% after 2 years of close clipping, and was 57 to 59% by midsummer of the 3d year, but these decreases were partly due to severe drought. Where upland prairie degenerated into the shortgrass (*Bouteloua gracilis*) type, the yield of clipped quadrats was reduced to about one-half of that of similarly clipped prairie. Where lowland prairie degenerated into the *Bouteloua gracilis* *Buchloe*

dactyloides type of bluegrass(*Poa pratensis*) type, the former prairie yield was reduced to 68%. Because of drought, these data are based upon yields of a single year" J.F. Weavers in Biol. Abs. 13(8):12601. October 1939.

Run-off

Bennett, C.S. Small area runoff studied. Engin. News-Rec. 123(15): 468, figs. Oct. 12, 1939.

The area involved is the Brush Creek watershed where a severe local storm on July 29-30, 1939 produced an exceptionally high peak runoff.

Meyer, O.H. Analysis of run-off characteristics. Discussion. Amer. Soc. Civ. Engin. Proc. 65(3) part 1:1423-1426. October 1939.

Discussion of paper by Otto H. Meyer appearing in November 1938 issue.

Sedimentation and Silt

Dowd, M.J. Silt problems of Imperial Irrigation District as affected by completion of Boulder Dam. Civ. Engin. 9(10):609-611, illus. October 1939.

Seed and Seedlings

Gross, L.S., Huberman, M.A. The seed makes the tree. Experience and research in seed selection are pointing the way to the tree planter. Amer. Forests 45(10):498-501, 523, illus. October 1939.

Hermann, E. McK., and Hermann, Wilford. The effect of maturity at time of harvest on certain responses of seed of crested wheatgrass, *Agropyron cristatum* (L.) Gaertn. Amer. Soc. Agron. Jour. 31(10):876-885, figs., tables. October 1939.
"Literature cited," pp. 884-885.

Hill, H.O. Harvesting buffalo grass seed for individual use. Amer. Soc. Agron. Jour. 31(9):821, illus. September 1939.

Describes an economical method of harvesting buffalo grass seed which will make possible the seeding of pastures to this grass, an operation that has not been practicable because of the difficulty in securing a seed supply.

Jester, J.R. and Kramer, P.J. The effect of length of day on the height growth of certain forest tree seedlings. Jour. Forestry 37(10):796-803, figs. October 1939.

"Literature cited," p. 803.

"Although considerable experimental work has been done on the effect of length of day on the growth, flowering, and fruiting of agricultural and horticultural plants, comparatively little work has been done on the effect of length of day on forest trees. The results reported here of work done at Duke University have important technical implications. For instance, they show that slash pine, short-leaf pine, jack pine, and beech can be thrown out of their normal

growing rhythm by long days; but the normal period of growth of other species such as chestnut oak and southern red oak is not readily changed."

Tinsley, S.L. Direct seeding - a revival. Jour. Forestry 37(11): 888-890, table. November 1939.

"Literature cited," p. 890.

"Since the large scale failure of direct seeding in the early days of forestry in the United States, artificial reforestation has been considered almost entirely in terms of planting. In this article the author protests the abandonment of direct seeding while still in its infancy and presents the results of experiments conducted to determine the factors affecting success and failure in direct seeding."

U.S. Bureau of plant industry. Division of forage crops and diseases. Production of herbage and forage crop seed in the United States of America. Herbage Rev. 7(3): 151-169, figs. September 1939.

Wood, O.M. Reproduction of shortleaf pine following mechanical treatment of the seedbed. Jour. Forestry 37(10): 813-814, tables. October 1939.

"Very often, comparatively simple silvicultural or soil treatments are all that is needed successfully to regenerate a stand. In shortleaf pine-oak mixtures on the coastal plain of New Jersey, the mechanical breaking up of the turf to expose the mineral soil resulted in the establishment of a good stand of seedlings. Removing the litter only by raking was not found to be effective."

Shelterbelts

George, E.J. Tree planting on the drier sections of the northern Great Plains. Jour. Forestry 37(9): 695-698. September 1939.

Silcox, F.A. Green belts in drouth areas. Nation's Agr. 14(7): 4, 15. Jly/Aug. 1939.

Cites the value of shelterbelts in the "wind-bitten land" of the Dakotas, Nebraska, Oklahoma and the Texas Panhandle.

Soil Conservation

Adams, Mildred. The good earth: these United States. Conserv. 5(5): 3-6. September-October 1939.

"Condensed from 'The New York Times Magazine' for September 24."

Bennett, H.H. A conservationist looks at Dixie. South. Conserv. and Amer. Tung. Oil 6(5): 3-11, 18, illus. August 1939.

Bunce, A.C. Some economic and social problems of soil conservation. Soil Conserv. 5(4): 73-76, 82. October 1939.

Charles, F.E. Modified practices for Michigan's fruit and truck country. Soil Conserv. 5(4): 93-94, 96, 99, table. October 1939.
The deviation in soil conservation practices, to fit them to the

peculiar conditions of the area, was necessary especially in contour adaptations. A "modified sod" is also used as well as a modified strip cropping plan.

Mention is made of the Michigan sand storms which often rival the dust storms of the plains.

Johnson, S.E. Definitions of "efficient farming". U.S. Bur. Agr. Econ. Land Policy Rev. 2(5):18-23. September-October 1939.

Twenhofel, W.H. The cost of soil in rock and time. Amer. Jour. Sci. 237(11):771-780, tables. November 1939.

"Abstract. The article considers the geological cost of soils in terms of the destruction of quantity of rock and duration of time required for production. It is emphasized that the more resistant rocks require immense periods of time to disintegrate and decompose into soil materials and, correspondingly, equally immense periods of time exist for removal of the products of destruction and, hence, there may be very limited and even no accumulation of residual materials at the places where the rocks are destroyed. Very resistant rocks, as quartzite, may lose the detached particles about as rapidly as release from the parent rocks takes place. Soluble rocks, as the limestones, lose immense quantities of the insoluble residues as the soluble parts are removed in solution and thus immense thicknesses of these rocks may be required to produce a very small thickness of residual accumulation. Poorly resistant rocks, as clays, shales, and poorly cemented sandstones, repair the ravages of erosion fairly quickly and, hence, soils derived from such rocks require small thicknesses of rock and short periods of time for production. Soils, hence, have very different geological values. This fact should be appreciated by all those on whom the responsibility of soil preservation rests."

Waksman, S.A. and Martin, J.P. The role of microorganisms in the conservation of the soil. Science 90(2335):304-305, table. Sept. 29, 1939.

Reports a series of studies in progress at the New Jersey Agricultural Experiment Station.

Women's side of the AAA. Wallaces' Farmer 64(21):669. Oct. 21, 1939.

Tells of the formation in Iowa of women's "Home Conservation Committees" for the purpose of studying the various angles of the farm program such as soil conservation, parity prices, farm income, crop production, etc.

Soil Conservation. Study and Teaching.

Palmer, E.L. Conservation education in the schools. A report of school activities and suggestions as to programs. Nature Mag. 32(9):509-516, illus. November 1939.

Renner, G.T. Teaching conservation of resources. Jour. Geogr. 38(6):245-251. September 1939.

"Abstract of a paper read before the National Council of Geography Teachers, Cambridge, Massachusetts, December 27, 1938."

Stevens, M.P. Desert life. Instr.49(1):47-56, illus. November 1939.

"Bibliography," p.48.

Suggested procedures for teaching units of work on deserts for primary, middle and upper grades. Activities based on the unit are suggested, there are many illustrations and a bibliography.

The soil conservation angle is brought out to some extent.

Soil Erosion and Control

Deppa, J.W. Cutting and use of brush in erosion control. Soil Conserv.5(4):83-84, 86, 92, illus. October 1939.

Otten, G.H. Shear-boards control erosion on cut slopes in Oregon. Pacific Road Builder and Engin.Rev.51(2):13-15. August 1939.

Wallace, H.M., jr. The present trend in the control of erosion in terrace outlets. Agr.Engin.20(10):393-394, figs. October 1939.

Willows prevent canal erosion. Engin.News-Rec.123(15):494. Oct. 12, 1939.

Refers to 20 miles of brittle-willows used along the Pathfinder canal of the North Platte irrigation project.

Soil Erosion and Control. Foreign Countries.

Akhurst, C.G. Further notes on burning, covers, and manuring.

Ceylon Rubber Res.Scheme Quart.Circ.15(3):117-122. October 1938.

"Light burning or scorch is recommended as conserving organic material (with consequent prevention of erosion and increase of humus), reducing the chance of soil injury through burning, reducing the loss of the more volatile mineral plant foods and avoiding the uneven distribution in the soil of the large amount of minerals in the ash of burned trees." Soils & Fert.2(5):225. 1939.

Chaundy, G.H. Primitive agricultural methods of the West Suk tribe and some improvements. East African Agr.Jour.5(1):23-30, illus. July 1939.

Mentions efforts to control soil erosion in parts of Kenya Colony.

Du Toit, A.L. Geological and soil characteristics in relation to deterioration and conservation of natural resources, etc. in the Union. S.African Jour.Sci.35:470-476. 1939.

"The soils of South Africa being essentially sub-tropical are commonly deficient in humus, N and P_2O_5 , on the whole delicate and their regeneration after damage slow and difficult. Enormous harm has resulted from gully- and sheet-erosion, deforestation, bad farming methods and overgrazing. More careful treatment is urged and a special State Reclamation Service advocated to cope with the dangerous position already developed." Biol.Abs.13(8):13853. October 1939.

La erosión de los suelos(in Uruguay) Rev.Asoc.Ingen.Agron.11(3):16-27, illus. September 1939.

Article in Spanish.

Report of a sub-committee appointed to investigate the problem of erosion.

Members of the committee are Miguel Qinteros, Eduardo Terra Arocena and Daniel Rey Vercesi.

Lowdermilk, W.C. Erosion-control lessons from old-world experience. I.Strip cropping by inheritance in France. Soil Conserv.5(4):85-86. October 1939.

Mackenzie, A.D. Coastal erosion in Victoria. Inst.Engin.Austral. Jour.11(7):229-236, figs. July 1939.

Summary:"The purpose of this paper is to describe briefly the general considerations concerning erosion of shores subject to marine and other influences, together with the application of protective measures thereto having particular regard to the foreshores of Port Philip Bay, Victoria, Australia."

Maher, Colin. Hill culture. East African Agr.Jour.5(1):36-40. July 1939.

States, briefly, the philosophy of hill culture, and suggests the possibilities of certain trees and shrubs grown in East Africa.

Montanari, Giosafat. On the transportation of soil in some mountain torrents of the Emiliana-Romagnolo Apennine (Notizie sul trascinamento di materiale solido in alcuni torrenti montani dell'Appennino Emiliana-Romagnolo) Ann.Lav.Pub.77(5):493-513. May 1939.

Article in Italian.

The author has investigated the silting up of numerous dams built on the upper course of the Secchiello torrent to obtain useful data on the control of similar torrents. As a synthesis of the exposition he gives an illustrative map showing the transportation of material in the various tributaries in relation to the physical nature of watersheds.

Petrus. Skogen atererövrar det magra Skane (Afforestation in Skane) Skogen 26(1):3-6, illus. January 1939.

Article in Swedish.

Reclamation of poor, sandy land and its protection from drifting sand.

Serre, M.de la. The technique of afforestation with pines in the west of France. Rev.des Eaux et Forêts 77(4):325-334. April 1939.

Article in French.

Soil conservation in pyrethrum fields. East African Agr.Jour.5(1):47-56, illus., table. July 1939.

"The most suitable method of erosion control for pyrethrum fields in Kenya colony, is a form of broad-base terracing."

Swabey, C. Erosion and afforestation in Jamaica. Jamaica Agr. Soc. Jour. 43(8):350-352. August 1939.

Swabey, C. Forestry in Jamaica. U.S. Tropical For. Expt. Sta. Caribbean Forester 1(1):5-6. October 1939.

"The policy of the Lands Department is (1) to develop measures of soil and water conservation and the prevention of erosion by (a) the formation, reafforestation, and maintenance of forest reserves under public ownership, and (b) the encouragement of protective measures on private lands; and (2) to develop the local timber industry on conservative lines."

Vegetative cover to combat soil erosion. Recommendations for New Zealand involve restoration of forest, tussock and grassland. Commonwealth Engin. 27(2):42-44. Sept. 1, 1939.

Soil Organic Matter

Dyal, R. S., Smith, F. B., and Allison, R. V. The decomposition of organic matter in soils at different initial pH. Amer. Soc. Agron. Jour. 31(10):841-850, figs., tables. October 1939.
"Literature cited," p. 850.

Vegetation

Costello, D. F. and Klipple, G. E. Sampling intensity in vegetation surveys made by the square-foot density method. Amer. Soc. Agron. Jour. 31(9):800-810, tables. September 1939.
"Literature cited," p. 810.

"This paper, based on sample plot data recorded from all major range vegetation types in Colorado, Wyoming, and the Black Hills region of South Dakota, deals with sampling intensity in relation to reliability of mean densities and forage factors secured by the square-foot density method. It also presents the relationships between number of plots required for a reliable sample and (a) size of area sampled, (b) vegetation type, and (c) adequacy of sampling as determined by the purpose of the survey.

Oosting, H. J. and Anderson, L. E. Plant succession on granite rock in eastern North Carolina. Bot. Gaz. 100(4):750-768. 1939.

"Granitic rock outcrops are frequent in the vicinity of the fall-line in N. Carolina, S. Carolina and Georgia. The unfavorable conditions for plant development on rock are here accentuated by long dry summers and high temps. Succession on the N. Carolina rocks follows 2 major lines originating (1) on the rock surface and (2) in depressions. Grimmia is the important mat-forming pioneer followed by (1) Cladonia-Selaginella, (2) Polytrichum (3) Andropogon, and (4) Conifers. The depressions have a variable development terminating in hardwoods. Considering the rate of succession it is suggested that vegetation once completely covered the rocks but that the activities of man resulting in frequent fires and erosion bared the surfaces which are today maintained by drought, windthrow and fire." -- Abs. Biol. Abstr. 13(8):12594. October 1939.

Water Conservation

Adams, T.C. Development of the Colorado river in the upper basin.

Amer. Soc. Civ. Engin. Proc. 65(7):1217-1237, tables. September 1939.

"In a general way, this paper treats the past and prospective use of water of the Colorado River and its tributaries in the upper basin above Lee's Ferry, Ariz. Descriptions are given on the topographic, industrial, and agricultural features connected with the basin and the effect of the Colorado River Compact and the Boulder Canyon Project Act on the use of water. Water supply for the upper basin, after agreements between the States concerned are satisfied, is shown to be somewhat less than had been anticipated by some.

"Conditions favoring and limiting future extension of irrigation in the upper basin are described. Additional irrigation projects of the normal type will be built; other projects, primarily to aid the livestock industry of the region by the irrigation of meadows and feed crops, are held to be desirable; and, the large diversion projects conveying water outside the water-shed of the Colorado River for irrigation, power, industrial, and municipal purposes are shown to be highly important in the general plan of upper-basin development. The hydro-power resources, the role to be taken by power generation in water development, and the relations between the use of water of the upper basin and the social, economic, and industrial growth of the basin and near-by regions, are discussed. The paper includes an appendix containing data on the irrigable areas of the upper basin and an analysis of the flow of the Colorado River at Lee's Ferry (where division is made between upper and lower basins) since the signing of the Compact, which is believed particularly significant as it handles flow during the period of lowest known river flow."

Gardner, H.H. Protected waterways. Soil Conserv. 5(3):55-56, illus. September 1939.

Olson, N.T. Ogden River project, Utah, 1939. U.S. Bur. Reclam. Reclam. Era 29(10):264. October 1939.

Young, W.R. Preserving the central valley. A brief sketch of the Reclamation bureau's vast project in California. Civ. Engin. 9(9):543-546, illus. September 1939.

"California geography, which is continually being revised to better suit the use and convenience of mankind, is now undergoing another major transformation. With the completion of the Central Valley Project, water that has almost reached the ocean via the Sacramento River will be pumped a hundred miles back upstream and turned into the San Joaquin; artificial rivers will stretch in two directions from Friant Dam; reclaimed delta lands will be protected from salt water intrusion; and channels long choked with silt will again have adequate water depths for commercial navigation. A quick survey of the project, with special emphasis on its present status, is Mr. Young's purpose in the accompanying paper. It has been prepared from a lecture on the Waterways Division program at the 1939 Annual Convention."

Wind Erosion

Cutting, C.D. Sand dune control at the mouth of the Columbia River.
Shore and Beach 6(4):119-121. October 1938.

Duncan, Kunigunde. Reclaiming the dust bowl. Nation 149(11):269-271.
Sept. 9, 1939.

Praises the work of H.H. Finnell and Bert W. McGinnis.

Koschmieder, H. Staubstürme und staubwände (Duststorms and dust walls)
Naturwissenschaften 27(8):113-122, illus. Feb. 24, 1939.

"The author defines the terms, presents (with copious classified bibliography) the geographic distribution of duststorms, summarizes data on duststorms in the United States, the Sudan, the Sahara, Syria, Palestine, Mesopotamia, Iran, and Australia and finally discusses warm and cold air duststorms and dust walls in general." --Expt. Sta. Rec. 81(4):476. October 1939.

Perkins, Ralph. Relief work in a dust bowl county. A socio-economic survey. Sociol. and Social Research 23(6):539-545. July-August 1939.

"A socio-economic study of Gray County, Kansas."

BOOK AND PAMPHLET NOTES AND ABSTRACTS

Alldis, V.R. Hydrology in relation to soil erosion. 55pp., typed, illus. Jan. 1939. 56.7 Al5H

Paper submitted to Institute of Engineers, N.S.W., March 1939.

Also in Inst. Engin. Aust. Jour. 11(7):245-258, illus. July 1939.

Summary - "This paper attempts to prove the correlation between hydrology and soil erosion and the essential significance of the former in any study of the latter. The science of hydrology is of recent development and is one of which present knowledge is fragmentary and incomplete. Land settlement in Australia is almost entirely governed by rainfall and moisture conditions and to prevent impoverishment of usable land, which is taking place throughout Australia, hydrologic laws must be studied and applied. In America some thousands of additional hydrologic stations have been recently established to furnish data in respect to duration and intensity of rainfall and associated phenomena. Despite this improvement in the position it is not yet possible to chart a reliable evaporation map of the United States of America. Very few hydrologic stations have been established in European countries including the United Kingdom. The paper reviews conditions in various parts of the world and suggests the collection of data regarding Australian conditions with a view to checking tendencies likely to lead to soil erosion."

Appleton, J.B., comp. The Pacific northwest. A selected bibliography covering completed research in the natural resource and socio-economic fields, and annotated list of in-progress and contemplated research, together with critical comments thereon 1930-39. 456pp. Portland, Oregon, Northwest regional council, 1939. 242 Ap5

Subjects covered include agriculture, flood control irrigation, land

classification, land reclamation, land utilization, range and grazing, soils, soil conservation and erosion, forest resources and utilization and water resources.

Association of official seed analysts of North America. Proceedings... thirtieth annual meeting, Guelph, Ontario, Canada, June 1938; edited by Publications committee, W.O. Whitcomb, M.T. Munn, E.H. Toole. 279pp., processed. The Association, 1939. 61.9 As7 30th 1938

Among the papers given was the following: Germination requirements of the seed of some introduced and native grasses, by V.K. Toole, pp. 227-243.

Ayres, Q.C. and Scoates, Daniels. Land drainage and reclamation. 2d. ed. 496pp., illus. New York and London, McGraw-Hill book company, inc., 1939. 54 Ay7 Ed.2

"Governmental activities related to some of the subjects treated in this book have received tremendous impetus since publication of the first edition in 1928. To keep pace with the progress resulting therefrom, revision is obviously necessary. As heretofore, dominant attention is directed to the practical needs of farmers and farm managers in dealing with problems that arise on individual farms...

"Aside from the Introduction, which was entirely rewritten, major changes have affected the chapter on Land Clearing and on Control of Erosion. In the first instance, contraction appeared possible without sacrifice of essential data whereas, in the latter, the erosion treatment was rewritten and expanded from one chapter to three. Practically all the new material on erosion was taken from a recent book by one of the authors called 'Soil Erosion and Its Control...'

"The chapter on Drainage Districts was expanded to include a discussion of Soil Conservation Districts and certain tables were added to the Appendix."

Baker, Gladys. The county agent. 226pp. Chicago, Ill., The University of Chicago press, 1939. 275.2 B17

Thesis (ph.D) - University of Chicago.

"Select bibliography": pp. 214-215.

"The... study is an attempt to describe and analyze the development and functions of the county agricultural agent movement from its inception through the New Deal period of work. The first part of the study is concerned with a description of the development and functions of the county agent. Then follows an analysis of his relationship to the federal, state, and county governments and to the semiofficial farm-bureau organization... In conclusion, an attempt is made to analyze the trends, special problems, and dilemmas in county agent work. Throughout the study, particular emphasis is given to the county agent's changing function and to the need for adjustment in his responsibilities and directions which has come about as a result of the changing agricultural policy." - Introd.

Brannen, C.O. Adjusting agriculture and services to the needs of farm people. 19 numb. 1., mimeogr. Fayetteville, Ark., 1939. 281.12 B732

Presidential address at the twentieth annual meeting of the Southwestern Social Science Association, Dallas, Texas, April 7, 1939.

Brinton, W.C. Graphic presentation. 512pp., illus. New York, Brinton associates, 1939. 238 B77G

"This book was planned with the hope of inspiring more and better factual presentation."

Comstock, A.B. Handbook of nature-study. 24th ed., 937pp., illus. Ithaca, N.Y., Comstock publishing company, inc., 1939. 409.5 C73 Ed.24

Partial contents: The soil, by H.O. Buckman, pp. 760-766; How valuable soil is lost, by A.F. Gustafson, pp. 766-770; How to conserve our soil, by A.F. Gustafson, pp. 770-775.

Conference on plant and animal communities. Proceedings. Plant and animal communities, comprising the proceedings of the Conference on plant and animal communities, held at the Biological laboratory, Cold Spring Harbor, Long Island, New York, from August 29 to September 2, 1938, edited by Theodor Just... 255pp., illus. Notre Dame, Indiana, The University press, 1939. 409 C76

Contains bibliographies.

Reprinted from The American midland naturalist v. 21, no. 1, pp. 1-255, January 1939.

Contents: Plant associations on land, by H.S. Conard, pp. 1-27; Littoral marine communities, by G.E. MacGintie, pp. 28-55; Fresh-water communities, by F.E. Eggleton, pp. 56-74; The biome, by J.C. Carpenter, pp. 75-91; The individualistic concept of the plant association, by H.A. Gleason, pp. 92-110; The unistratal concept of plant communities (the unions) by Theodor Lipman, pp. 111-145; The climax and its complexities, by S.A. Cain, pp. 146-181; Social coordination and the superorganism, by A.F. Emerson, pp. 182-209; On the analysis of social organization among vertebrates, with special reference to birds, by N. Tinbergen, pp. 210-234; Analytical population studies in relation to general ecology, by Thomas Park, pp. 234-255.

Fassett, N.C. The leguminous plants of Wisconsin; the taxonomy, ecology, and distribution of the leguminosae growing in the state without cultivation... with drawings by Richard I. Evans and a study of epidermal outgrowths by Catherine Mose. 157pp., illus. Madison, The University of Wisconsin press, 1939. 452.3 F26

Federal writers' project, Pennsylvania. Conservation education. Pa. Dept. Pub. Instruction. Conserv. Bul. 214. 108pp., illus. Harrisburg, 1939. 279.073 F31

Bibliography, pp. 106-108.

There are chapters on soil conservation, conservation of water, conservation of forests, conservation of wildlife and conservation of minerals.

Gorrie, R.M., comp. Bibliography of soil erosion. Part I - Indian section. Imp. Coun. Agr. Res. Misc. Bul. 28. 55pp. Delhi, Published by the manager of publications, 1939. 22 Im7N

The bibliography is divided into the following parts: Erosion (general); Erosion (local); Effect of meteorological conditions on erosion; Effect of vegetation on erosion; Erosion and engineering; Agriculture in relation to erosion; Crops in relation to erosion; Forests in relation to erosion; Livestock in relation to erosion.

Heuson, Rudolf. Bodenkultur der Zukunft. 96pp., illus. Neudamm and Berlin, Verlag von S. Neumann, 1938. 56.7 H48
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"Following completion of the field study, frequency studies of rainfalls and of peak rates of runoff were made by the station-year method, and the results used as a basis for evaluating the discharge data.

"The extensions of farm-lateral systems were not sufficient to permit conclusions concerning their effects upon the discharges from the various districts.

"While the first objective was not realized fully the data contributed to the information upon the probable magnitudes and frequencies of maximum rainfalls and discharges from drainage districts and the frequencies, amounts and durations of excesses in discharge above selected design rates of runoff."

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"This book is of special importance to workers in fields in which the Department of Agriculture is interested, for it bears directly on the Department's current major effort to bring about a more immediate living relationship between the citizen and his government...

"The voice of the nation is the voice of a man talking to his neighbor multiplied by the millions of men and neighbors.

"These should be the voices of friendly men, The American citizen should not be lost in the crowd."

"Isn't the last sentence a pretty good definition of what the Department is trying to do in the county planning program, to keep the American rural citizen from being lost in the crowd?" -- From a review by Russell Smith, in Agricultural Economics Literature 13(7): 691-692. September 1939.

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areas...

"This study also serves two other purposes. The data on individual
farm variations are of considerable value in developing a more sci-
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Nebraska

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Hunter, Byron, Cockerill, P.W. and Pingrey, H.B. Type of farming and ranching areas in New Mexico. Part I. N.Mex. Agr. Expt. Sta. Bul. 261. 68pp., illus. State College, May 1939. 100 N465.b no. 261

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"It presents further, a discussion of the physical, biological, and economic factors which have influenced and largely determined the kinds of farming and ranching to be found in different parts of the state. Lastly, it presents a series of figures which show approximately where the principal crops are grown, where the different kinds of livestock are produced and where the more important types of farming are carried on."

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Wakefield, Richard and Landis, P.H. The drought farmer adjusts to the west. Wash. Agr. Expt. Sta. Bul. 378. Ser. in Rural Population 4. 56pp., illus. Pullman, July 1939. 100 W27E b, no. 378

"The study calls attention to problems and exposes needs. There are no simple solutions. But where problems exist of the pervasive nature revealed here, there is a challenge to those groups dealing with public policy, creating public programs, and planning for the use of natural resources, to concentrate attention in an effort to alleviate insofar as possible individual distress and to conserve insofar as possible resources in the face of population pressure. There is a dual problem of conservation - conservation of the human element and of natural resources."

West Virginia

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"This revision is devoted mainly to bringing information up to date on reservoirs described in the original edition. Detailed

surveys have been made on six reservoirs previously described under reconnaissance investigations and a very brief discussion of these and a few others has been included in the appropriate place under detailed surveys. Further reconnaissance studies have been made on other reservoirs, and the results are given herein. Additional information on watershed characteristics has been added where available, and errors in fact and figures discovered since original publication have been corrected."

Howell, Joseph, jr. Tree and shrub species information. U.S. Soil Conserv. Serv., Southwest Reg. Reg. Bul. 53. n.p., mimeogr. Albuquerque, N.M., Feb. 4, 1939. 1.9608 R26 no. 53

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Most of these relationships are informal. When important problems are confronted, however, interdepartmental contacts are often formalized in a committee. Interdepartmental committees may be grouped under three major headings. The first is the exploratory or research committee, the second the functional coordinating committee, and the third the institutional coordinating committee." - p.22.----- Agr.Econ.Lit.13(8):842-843. October 1939.

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